Notation3

Notation3, or **N3** as it is more commonly known, is a shorthand non-XML serialization of Resource Description Framework models, designed with human-readability in mind: N3 is much more compact and readable than XML RDF notation. The format is being developed by Tim Berners-Lee and others from the Semantic Web community. A formalization of the logic underlying N3 was published by Berners-Lee and others in 2008.[1]

N3 has several features that go beyond a serialization for RDF models, such as support for RDF-based rules. Turtle is a simplified, RDF-only subset of N3.

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Notation3	
Filename extension	.n3
Internet media type	text/n3;charset=utf-8
Developed by	Tim Berners-Lee
Type of format	semantic web
Container for	RDF data
Standard	n3 (http://www.w3.org/TeamSubmission/n3/)
Website	www.w3.org /TeamSubmission/n3/ (https://www.w3.org/TeamSubmission/n3/)

Examples

The following is an RDF model in standard XML notation:

```
<rdf:RDF
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:dc="http://purl.org/dc/elements/1.1/">
  <rdf:Description rdf:about="https://en.wikipedia.org/wiki/Tony_Benn">
    <dc:title>Tony Benn</dc:title>
    <dc:publisher>Wikipedia</dc:publisher>
  </rdf:Description>
</rdf:RDF>
```

may be written in Notation3 like this:

```
@prefix dc: <http://purl.org/dc/elements/1.1/>.

<https://en.wikipedia.org/wiki/Tony_Benn>
  dc:title "Tony Benn";
  dc:publisher "Wikipedia".
```

This N3 code above would also be in valid Turtle syntax.

Comparison of Notation3, Turtle, and N-Triples

Feature		Notation3	Turtle	N-Triples
Character encoding		UTF-8		ASCII
Directives	`@base`	✓	✓	✗
	`@forAll`	✓	✗	✗
	`@forSome`	✓	✗	✗
	`@keywords`	✓	✗	✗
	`@prefix`	✓	✓	✗
Lists	`()` (DAML lists)	✓	✓	✗
	`{ … }` (statement lists)	✓	✗	✗
Literals	`true` / `false` (Boolean)	✓	✓	✗
	`xsd:decimal` (decimal arbitrary length)	✓	✓	✗
	`xsd:double` (decimal double)	✓	✓	✗
	`xsd:integer` (decimal integer)	✓	✓	✗
Syntactic sugar	RDF paths	✓	✗	✗
	QNames	✓	✓	✗
	`a`/`@a` (equiv. to `rdf:type`)	✓	✓	✗
	`[ ]` (shorthand for blank node)	✓	✓	✗
	`=>` (*x* implies *y*)	✓	✗	✗
	`<=` (*y* implies *x*)	✓	✗	✗
	`=` (*x* is equivalent to *y*)	✓	✗	✗
	`,` (repeat object in list)	✓	✓	✗
	`;` (repeat subject/verb in list)	✓	✓	✗

See also

- N-Triples
- Turtle (syntax)

External links

- Notation 3 W3C Submission (http://www.w3.org/TeamSubmission/n3/)
- Notation 3 Outline (http://www.w3.org/DesignIssues/Notation3.html) on *W3C Design Issues* by Tim Berners-Lee
- Notation 3 Primer (http://www.w3.org/2000/10/swap/Primer): *Getting into RDF & Semantic Web using N3*
- A Rough Guide to Notation3 (http://infomesh.net/2002/notation3)
- RDF for "Little Languages" (http://www.ninebynine.org/RDFNotes/RDFForLittleLanguages.htm)
- An editing mode of N3 for Emacs (https://web.archive.org/web/20090409213144/http://larve.net/people/hugo/2003/scratchpad/NotationThreeEmacsMode.html)
- An editing mode of N3 for vim (http://www.vim.org/scripts/script.php?script_id=944)

- An editing mode of N3 for textmate (https://web.archive.org/web/20130517202748/http://www.ope nvest.com/trac//wiki/n3SyntaxHighlighting)
- An editing mode of N3 for gedit (http://jamesrdf.blogspot.fr/2009/04/in-searching-for-highlighting-mode-for.html)
- EulerGUI (http://eulergui.sourceforge.net/), an IDE centered on N3 editor with translation from RDF, with validation, prefix management, uploading of resources, graph view, table view, etc.

References

1. Berners-Lee, T. I. M.; Connolly, D. A. N.; Kagal, L.; Scharf, Y.; Hendler, J. I. M. (2008). "N3Logic: A logical framework for the World Wide Web". *Theory and Practice of Logic Programming*. **8** (3). arXiv:0711.1533 (https://arxiv.org/abs/0711.1533). doi:10.1017/S1471068407003213 (https://doi.o rg/10.1017%2FS1471068407003213).

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